**HW ANSWERS: p. 401**

**(2)** (a) Yes. 2 outcomes (6 or not 6)

(b) No. More than 2 outcomes.

(c) Yes. As long as dolls are independent.

(d) No. Probabilities of Dem and Repub. change as people are picked.

(e) Yes. Assuming responses are independent.

**(18) B(6, 0.80)**

(a) P(Bc ∩ Bc ∩ B) = (0.20)(0.20)(0.80) = ***0.032***

(b) B(6, 0.20) p = 0.20 because we are concerned with her MISSING the bulls eye

P(X > 1) = 1-binomcdf(6, 0.20, 0) = ***0.7379***

(c) P(Bc ∩ Bc ∩ Bc ∩ B) = 0.0064 0.0064 + 0.00128 = ***0.00768***

P(Bc ∩ Bc ∩ Bc ∩ Bc ∩ B) = 0.00128

(d) P(X = 4) = binompdf(6, 0.80, 4) = ***0.24576***

(e) P(X > 4) = 1 – P(X < 3) = 1—binomcdf(6, 0.80, 3) = ***0.90112***

(f) P(X < 4) = binomcdf(6, 0.80, 4) = ***0.34464***

**Worksheet:**

1. B(10, 0.60)

P(X = 3) = binompdf(10, 0.60, 3) = ***0.0425***

1. B(9, 0.60)
2. P(X > 5) = 1 – P(X < 4) = 1 – binomcdf(9, 0.6, 4) = ***0.7334***
3. P(X = 7) = binompdf(9, 0.60, 7) = ***0.1612***
4. P(X > 3) = 1 – P(X < 3) = 1-binomcdf(9, 0.60, 3) = ***0.9006***
5. B(200, 0.83)

Mean = μX = (200)(0.83) = ***166 people***

Standard deviation = = ***5.312 people***

1. μ ± σ = 166 ± 5.312 = (160.688, 171.312)

Lying WITHIN 1 std. deviation of the mean (and being binomial) indicates: P(161 <X < 171)

P(161 <X < 171) = P(X <171) – P(X <160) = 0.8503 – 0.1504 = ***0.699***